Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 through 37 (Cancelled).

38. (Currently amended) A method of analyzing a sample ~~by immunohistochemistry, in situ hybridization, fluorescent in situ hybridization, a Southern hybridization, a Northern hybridization, a Western annealing, or an ELISA~~, wherein said method comprises:

providing said sample;

preparing the sample for analysis ~~comprising the steps of fixation, processing, imbedding, deparaffinization, and dehydration, wherein ultrasound at a frequency of at least 100 kHz is applied during each step except imbedding~~;

contacting said sample with a reagent to form a reaction mixture;

~~analyzing the prepared sample using a process selected from the group consisting of:~~

~~immunohistochemistry,~~

~~in situ hybridization,~~

~~fluorescent in situ hybridization,~~

~~a Southern hybridization,~~

~~a Northern hybridization,~~

~~a Western annealing, and~~

~~an ELISA; and~~

applying ultrasound to said reaction mixture at a frequency of at least 100 kHz ~~to said sample during said analysis~~; and

detecting a result of said reaction mixture.

39. (Currently amended) The method of claim 38 wherein said ~~immunohistochemistry, in situ hybridization, or fluorescent in situ hybridization~~ analysis is performed on a solid phase, said solid phase being selected from the group consisting of a tissue section, tissue microarray, and a chip.

40. (Currently amended) The method of claim 38 wherein said ~~Southern hybridization, Northern hybridization, Western annealing or ELISA~~ analysis is performed on a membrane, a microarray or a DNA chip.

41. (Previously presented) The method of claim 38 wherein said method is performed on a solid phase, a microarray, a membrane or a DNA chip and wherein said solid phase, microarray, membrane or DNA chip receives ultrasound power of at least 0.01 W/cm^2.

42. (Previously presented) The method of claim 38 wherein a power of said ultrasound is in a range of 0.01-100 W/cm^2.

43. (Previously presented) The method of claim 38 wherein said frequency is in a range of 100 kHz to 50 MHZ.

44. (Previously presented) The method of claim 38 wherein two or more ultrasound transducers are used to produce said ultrasound.

45. (Previously presented) The method of claim 38 wherein said method is performed on a solid phase, membrane, microarray or DNA chip and wherein one or more ultrasound transducers are used to produce an ultrasound field that allows at least a portion of said solid phase, membrane, microarray or DNA chip to receive a uniform frequency and intensity of ultrasound.

46. (Original) The method of claim 38 wherein said ultrasound is produced by a transducer comprising one or more heads.

47. (Previously presented) The method of claim 46 wherein one or more of said heads are capable of emitting a frequency selected from the group consisting of a single frequency and a wideband frequency.

48. (Previously presented) The method of claim 38 wherein said method is performed on a sample, a tissue section, or a membrane.

49. (Original) The method of claim 46 wherein one head on a single transducer produces a frequency different from a frequency produced by a second head on said single transducer.

50. (Original) The method of claim 46 wherein one head on a single transducer produces an intensity different from an intensity produced by a second head on said single transducer.

51. (Original) The method of claim 44 wherein each of said transducers produces an ultrasound frequency different from an ultrasound frequency produced by at least one other transducer.

52. (Original) The method of claim 44 wherein each of said transducers produces an ultrasound intensity different from an ultrasound intensity produced by at least one other transducer.

53. (Previously presented) The method of claim 48 wherein a range of frequencies is applied to said sample, said tissue section, or said tissue.

54. (Previously presented) The method of claim 48 wherein said method is performed on a solid phase, membrane, microarray or DNA chip and wherein a plurality of transducers are arranged around said solid phase, membrane, microarray or DNA chip in a two-dimensional arrangement.

55. (Previously presented) The method of claim 48 wherein said method is performed on a solid phase, membrane, microarray or DNA chip and wherein a plurality of transducers are arranged around said solid phase, membrane, microarray or DNA chip in a three-dimensional arrangement.

56. (Previously presented) The method of claim 48 wherein said method is performed on a solid phase, membrane, microarray or DNA chip and wherein said solid phase, membrane, microarray or DNA chip is rotated.

57. (Previously presented) The method of claim 48 wherein said method is performed on a solid phase, membrane, microarray or DNA chip and wherein a transducer revolves around said solid phase, membrane, microarray or DNA chip.

58. (Original) The method of claim 38 wherein said ultrasound is produced as a continuous signal.

59 and 60. (Cancelled)

61. (Original) The method of claim 38 wherein said ultrasound is produced in pulses.

62 and 63. (Cancelled)

64. (Previously presented) The method of claim 61 wherein said frequency varies in a range of 0.1-50 MHZ.

65. (Original) The method of claim 61 wherein said pulses vary in intensity.

66 and 67. (Cancelled)

68. (Currently amended) The method of claim ~~66~~ 58 wherein said signal varies in intensity over time.

69. (Previously presented) The method of claim 38 wherein said method is performed on a solid phase, membrane, microarray or DNA chip wherein said solid phase, membrane, microarray or DNA chip receives ultrasound of a power in the range of 0.01-100 W/cm^2.

70 through 91 (Cancelled).

92. (New) The method of claim 38 wherein said analysis is selected from the group consisting of:

immunohistochemistry,

in situ hybridization,

fluorescent in situ hybridization,

a Southern hybridization,

a Northern hybridization,

a Western annealing, and

an ELISA.